

WHAT IS CLAIMED IS:

1. A process for checking the static currents of a direct conversion type of frequency transposition device which includes a transconductor block receiving the input signal and a current switching block connected to the output from the  
5 device, comprising:

servocontrolling at least a common mode static output current from the frequency transposition device to a current proportional to a reference current and independent of a static output current from the transconductor block.

2. The process according to claim 1, wherein the step of servocontrolling comprises servocontrolling a common mode input current to the current switching block to a current proportional to the reference current independent of the  
5 static output current from the transconductor block.

3. The process according to claim 2, wherein the input current to the current switching block is a differential current, and wherein the static output current from the transconductor block is a differential current, further comprising:  
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servocontrolling a difference between the differential input currents to the current switching block to zero by making a differential check of the differential static output currents from the transconductor block.

4. The process according to claim 1, wherein the step of servocontrolling comprises servocontrolling the common mode static output current from the frequency transposition device directly to the said current proportional to the reference current and independent of static output current from the transconductor block.  
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5. The process according to claim 4, wherein the static output current from the transconductor block is a differential current, further comprising:

servocontrolling a difference between the static output currents from the frequency transposition device to zero by  
5

making a differential check of the static output currents from the transconductor block.

6. The process according to claim 1, further including servocontrolling the static output current to a current proportional to the reference current and independent of the static output current from the transconductor block by  
5 servocontrolling each input current to the current switching block onto a current proportional to the reference current independent of the static output current from the transconductor block.

7. A direct conversion type of frequency transposition device, comprising:

a transconductor block receiving an input signal;

a current switching block connected to an output from the  
5 device; and

a servocontroller operable servocontrol at least a common mode of a static output current from the frequency transposition device to a current proportional to a reference current and independent of a static output current from the  
10 transconductor block.

8. The device according to claim 7, wherein the servocontroller operates to servocontrol a common mode input current to the current switching block to a current proportional to the reference current and independent of the  
5 static output current from the transconductor block.

9. The device according to claim 8, wherein the servocontroller comprises:

a current source generating the reference current on its output terminal connected to a current switching block input;

5 and

a single current amplifier having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the  
10 transconductor block output.

10. The device according to claim 9, the servocontroller further comprising a differential current amplifier connected between differential transconductor block outputs and a means for polarizing this transconductor block so as to servocontrol  
5 a difference between differential input currents to the current switching block to zero by making a differential control of static output currents from the transconductor block.

11. The device according to claim 7, wherein the servocontroller directly servocontrols common mode static output current from the frequency transposition device to the said current proportional to the reference current and  
5 independent of the static output current from the transconductor block.

12. The device according to claim 11, wherein the servocontroller comprises:

a current source generating the said reference current on its output terminal connected to a current switching block  
5 input; and

a single current amplifier having a first input connected to the output terminal from the current source, a second input connected to the current switching block output and an output connected to the transconductor block output.

13. The device according to claim 12, the servocontroller further comprising a differential current amplifier connected between differential transconductor block outputs and a means for polarising this transconductor block  
5 so as to servocontrol a difference between differential static output currents from the frequency transposition device to zero by making a differential control of static output currents from the transconductor block.

14. The device according to claim 8, wherein the servocontroller further operates to servocontrol each input current to the current switching block to a current proportional to the reference current and independent of the  
5 static output current from the transconductor block.

15. The device according to claim 14, wherein the servocontroller comprises:

a current source generating the said reference current on its output terminal connected to the current switching block  
5 input;

a first current amplifier that has a first input connected to the output terminal from the current source, an output connected to a first input to the current switching block and to a first output from the transconductor block, and  
10 looped back to a second input of the first amplifier; and

a second current amplifier that has a first input connected to the output terminal from the current source, an output connected to a second input of the current switching block and to a second output from the transconductor block and  
15 looped back to a second input of the second amplifier.

16. The device according to claim 7 as fabricated in the form of an integrated circuit.



17. A wireless communication system terminal which includes a direct conversion type of frequency transposition device, the device comprising:

a transconductor block receiving an input signal;

5 a current switching block connected to an output from the device; and

a servocontroller operable servocontrol at least a common mode of a static output current from the frequency transposition device to a current proportional to a reference  
10 current and independent of a static output current from the transconductor block.

18. The terminal according to claim 17, wherein the terminal is a mobile cell phone.

19. The terminal according to claim 17, wherein the servocontroller operates to servocontrol a common mode input current to the current switching block to a current proportional to the reference current and independent of the  
5 static output current from the transconductor block.

20. The terminal according to claim 19, wherein the servocontroller comprises:

a current source generating the reference current on its output terminal connected to a current switching block input;  
5 and

a single current amplifier having a first input connected to the output terminal from the current source, a second input connected to the current switching block input and to the transconductor block output, and an output connected to the  
10 transconductor block output.

21. The terminal according to claim 20, the servocontroller further comprising a differential current amplifier connected between differential transconductor block outputs and a means for polarizing this transconductor block  
5 so as to servocontrol a difference between differential input currents to the current switching block to zero by making a differential control of static output currents from the transconductor block.

22. The terminal according to claim 18, wherein the servocontroller directly servocontrols common mode static output current from the frequency transposition device to the said current proportional to the reference current and  
5 independent of the static output current from the transconductor block.

23. The terminal according to claim 22, wherein the servocontroller comprises:

a current source generating the said reference current on its output terminal connected to a current switching block  
5 input; and

a single current amplifier having a first input connected to the output terminal from the current source, a second input connected to the current switching block output and an output connected to the transconductor block output.

24. The terminal according to claim 23, the servocontroller further comprising a differential current amplifier connected between differential transconductor block outputs and a means for polarising this transconductor block  
5 so as to servocontrol a difference between differential static output currents from the frequency transposition device to zero by making a differential control of static output currents from the transconductor block.

25. The terminal according to claim 19, wherein the servocontroller further operates to servocontrol each input current to the current switching block to a current proportional to the reference current and independent of the  
5 static output current from the transconductor block.

26. The terminal according to claim 25, wherein the servocontroller comprises:

a current source generating the said reference current on its output terminal connected to the current switching block  
5 input;

a first current amplifier that has a first input connected to the output terminal from the current source, an output connected to a first input to the current switching block and to a first output from the transconductor block, and  
10 looped back to a second input of the first amplifier; and

a second current amplifier that has a first input connected to the output terminal from the current source, an output connected to a second input of the current switching block and to a second output from the transconductor block and  
15 looped back to a second input of the second amplifier.

27. A direct conversion frequency transposition device,  
comprising:

an input;

a radio frequency stage connected to the input;

5 a current switching stage connected to the radio  
frequency stage;

an output connected to the current switching stage; and

a servocontroller operable to control standby currents in  
the radio frequency stage and current switching stage  
10 independently of each other.

28. The device of claim 27 wherein the radio frequency  
stage is a transconductor.

29. The device of claim 27 wherein the standby currents  
of the radio frequency stage and current switching stage which  
are servocontrolled are standby output currents.

30. The device of claim 29 wherein the standby output  
currents are directly servocontrolled.

31. The device of claim 30 wherein the servo controller operates to servocontrol the standby output current of the current switching stage directly to a current proportional to a reference current and independent of the standby output  
5 current of the radio frequency stage.

32. The device of claim 31 wherein a difference between differential standby output currents of the current switching stage is servocontrolled to zero by differentially checking standby output currents of the radio frequency stage.

33. The device of claim 29 wherein the standby output currents are indirectly servocontrolled.

34. The device of claim 33 wherein the servo controller operates to servocontrol input current to the current switching stage to a current proportional to a reference current and independent of the standby output current of the  
5 radio frequency stage.

35. The device of claim 34 wherein a difference between differential input currents to the current switching stage is servocontrolled to zero by differentially checking standby output currents of the radio frequency stage.